DOCUMENT RESUME

ED 358 025 SO 023 130

AUTHOR Willis, A. Sandra
TITLE Integrating Levels of Critical Thinking into Writing Assignments for Introductory Psychology Students.
PUB DATE 92
NOTE 17p.; Paper presented at the Annual Meeting of the American Psychological Association (Washington, DC, August 14-18, 1992).
PUB TYPE Information Analyses (070) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Students; *Course Content; *Critical Thinking; Higher Education; Introductory Courses; *Psychology; Teaching Experience; Writing Exercises; *Writing Instruction; Writing Processes

ABSTRACT

Short analytical writing exercises were designed to develop critical thinking and writing skills; stimulate creative thinking and writing; promote learning of psychological concepts; and to assess student knowledge. Design of these assignments was based on Bloom's taxonomy of multiple levels of critical thinking: recall, comprehension, application, analysis, synthesis, and evaluation. An emphasis was placed on presenting problems and questions that assumed an understanding of the material and allowed for analysis and application to real-life situations. Content for a one-semester course in introductory psychology was divided into nine topical areas: History, Systems, and Methods; Biological Bases; Sleep; Conditioning and Learning; Memory and Intelligence; Developmental Psychology; Personality; Abnormal Behavior; and Social Psychology. During the semester, analytical exercises corresponding to these segments of material were distributed to students. Students selected two or three topics on the basis of individual interest. For each topic, students completed a two-page typed paper that integrated knowledge of concepts and research presented in class and the textbook with students' opinion and experience. Written assignments were evaluated for critical thinking content and writing skill; scores were incorporated into examination grades. The majority of students reported that the assignments helped develop their thinking skills and stimulated them intellectually. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED358025

Integrating Levels of Critical Thinking into Writing Assignments for Introductory Psychology Students

A. Sandra Willis

University of South Carolina

Salkehatchie Campus

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

A. SANDRA WILLIS

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SO 023 130

Running Head: INTEGRATING CRITICAL THINKING INTO WRITING ASSIGNMENTS

ABSTRACT

Short analytical writing exercises were designed to develop critical thinking and writing skills, stimulate creative thinking and writing, promote learning of psychological concepts, and to assess student knowledge. Design of these assignments was based on Bloom's taxonomy of multiple levels of critical thinking: recall, comprehension, application, analysis, synthesis, and evaluation. An emphasis was placed on presenting problems and questions which assumed an understanding of the material and allowed for analysis and application to real-life situations. Content for a one-semester course in introductory psychology was divided into nine topical areas: History, Systems, and Methods; Biological Bases; Sleep; Conditioning and Learning; Memory and Intelligence; Developmental Psychology; Personality; Abnormal Behavior; and Social Psychology. During the semester, analytical exercises corresponding to these segments of material were distributed to students. Students selected two or three topics on the basis of individual interest. For each topic, students completed a two-page typed paper which integrated knowledge of concepts and research presented in class and the textbook with students' opinion and experience. Written assignments were evaluated for critical thinking content and writing skill; scores were incorporated into examination grades. The majority of students reported that the assignments helped develop their thinking skills and stimulated them intellectually.

Integrating Levels of Critical Thinking into Writing Assignments for Introductory Psychology Students

Should the teaching of psychology involve mastery of specific facts within a broad body of knowledge or the possession of skills? Interest in embedding writing and critical thinking assignments into psychology curricula has been stimulated in recent years (Nodine, 1990; McGovern & Hogshead, 1990). During the past 15 years, there has been a national movement in education across many disciplines to experiment with a variety of methods for teaching students to think critically and analytically (Meyers, 1986; Zechmeister & Johnson, 1992), and for teaching students to express themselves well in a written format (Knoblauch & Brannon, 1983). This paper presents ideas for designing introductory psychology assignments which combine the development of writing skills with that of critical thinking skills at successive levels of sophistication. Primary objectives for including thinking and writing skills are to help develop these skills in students, to enhance creative thinking and writing, to promote learning of psychological concepts, and to assess students' knowledge of course material.

The traditional focus in the teaching of psychology is the transmission of information through a lecture format. A plethora of information is now available through various media, so that psychology professors must be more than purveyors of information. Moreover, the factual information imparted today may be outmoded in a short time (Meyers, 1986). A formal lecture approach to

psychology instruction may discourage student participation and inquiry and encourage rote memorization of concepts as interpreted by the professor. Encouraging adaptive thinking and self-directed inquiry necessitates that psychology instructors rethink and reshape their roles to concentrate on teaching students both skills and factual concepts.

As it is crucial that students encounter critical thinking opportunities, it is essential that they be given writing assignments (Costin, 1982; Boice, 1982, 1990; McGovern & Hogshead, 1990). Students learn the fundamental elements of writing in their English courses, but they must be given writing assignments in other disciplines to further develop and refine their writing skills. Psychology professors can facilitate effective communication by assigning writing projects based on course material and by administering short answer and essay questions in examinations. Interesting and challenging writing assignments often enhance student involvement and motivation to learn (Snodgrass, 1985) and they provide an additional evaluation method that is different from objective examination questions (Blevins-Knabe, 1987).

It is important that writing assignments be integrated throughout psychology curricula, matching assignments to students' knowledge and skills. For introductory psychology students, short written assignments on special topics throughout the year may be more helpful than longer term papers. A series of short papers offers a variety of assignments with opportunities for increasingly sophisticated levels of thinking. The instructor's comments and

suggestions on short papers provide quick feedback that is appreciated by the students and helps improve their writing during the semester.

The tendency of both professors and students to avoid writing-intensive courses is understandable, particularly in larger introductory classes (Allen, 1984; Boice, 1990). For some students, the process of writing which requires logical thought, analysis of issues, and the composition of several drafts may be perceived as intimidating. Psychology professors may hesitate to assign writing tasks due to time constraints from multiple academic and professional duties. Designing thoughtful writing assignments and grading many papers in addition to other course preparation demands may be perceived as nearly impossible tasks (Boice, 1990; Selby & Calhoun, 1979). Writing assignments may be embedded within other assignments and examinations to minimize grading time and enhance student learning (Spiegel, Cameron, Evans & Nodine, 1980). For example, a writing assignment to identify independent and dependent variables, provide a rationale for an experiment, predict experimental results, and so on, aids students' understanding of concepts as well as helps the instructor assess that understanding.

Embedding the instruction and assessment of critical thinking and writing skills in Psychology courses recognizes that skills do not exist in a vacuum. There must be substantive disciplinary content to which those skills are applied. Critical thinking skills may be learned by a student in a logic course or a course on problem-solving; however, studies have suggested that there is

little carryover from a logic course to the application of logic in other settings (Meyers, 1986).

The process of writing is itself a product of critical thinking. Writing is a learning tool for heightening and refining thinking (Olson, 1984). As students write about concepts within psychology they are displaying comprehension, and, if the assignment demands, higher levels of thinking, e.g. analysis, synthesis, application, and evaluation.

Instructors must provide students with a cognitive framework for analysis and synthesis of information within psychology, nurture an attitude of perceptive thinking about topics, and apply topics to the students' realm of experience (Glaser, 1985; Zechmeister & Johnson, 1992). A cognitive framework is a structure for making sense of concepts, materials, issues, and methods of psychology (Spiegel, et al., 1980). Creating frameworks for critical thinking and evaluating the students' written "thought products" takes time to carefully design exercises and assignments that stimulate students' thinking and provide a means to assess students' knowledge.

Method

As a part of a campus-wide project, Bloom's taxonomy was implemented as a tool for assessing students' critical thinking in essays from several disciplines (Willis, Shelton, & McDowell, 1991). This taxonomy distinguishes levels of thought from lower to higher order: recall, comprehension, application, analysis, synthesis, and evaluation (cited in Olson, 1984). These levels were

operationalized for application to psychology writing assignments in all of this author's psychology courses; however, only writing assignments used in introductory psychology classes are reported in this paper.

The process of operationalizing Bloom's critical thinking levels actually provides a guide for composition of writing assignments and examination questions. The most basic level of thought is recall, remembering previously learned material in such a way that the student can name, list, match or define psychological terms. Comprehension, the second level of thought, is the student's ability to understand the meaning of the material so that it can be identified, described, explained, and summarized. Application, the third level of thought, involves using learned materials in new and concrete situations, and is cued by asking the student to demonstrate, apply, and illustrate concepts. Taxonomy level four, analysis, is operationalized as breaking down information into component parts to enhance understanding so that material may be classified or compared to other materials. The fifth level of thought, synthesis, requires constructing a new whole from previously learned information, e.g. proposing, designing or inventing. Evaluation, the final level, involves judging the worth of material for a specific purpose so that the student can criticize, convince, or assess a situation.

Bloom's taxonomy was applied to writing assignments in two single-semester introductory psychology classes with a total of 45 students. Course content included nine topical areas: History,

Systems, and Methods; Biological Bases; Sleep; Conditioning and Learning; Memory and Intelligence; Developmental Psychology; Personality; Abnormal Behavior; and Social Psychology. Each topical area included a presentation by the instructor, student discussion, an experiential exercise, and distribution of a critical thinking paper topic. These critical thinking paper topics (See Appendix) presented an analytical activity, problem and/or series of questions, that required students to write and type a two-page paper. Each paper topic was designed to allow opportunities for critical thought at several of Bloom's levels. Students had the option of using any reference material they wished; however, references were not necessary. An emphasis was placed on questions which assumed an understanding of the material and allowed for analysis and application to real-life situations. The primary learning objectives were demonstrated evidence of critical thinking in which course material and their own experience were integrated, and high quality of writing. During the semester, each student selected two or three of the nine critical thinking writing assignments and submitted each on the examination day for that section of material. The writing assignment was completed in lieu of answering a corresponding short answer section on the test and was worth approximately 25% of the total test score.

Evaluation

Evaluation of the critical thinking writing activities was based on successful demonstrations of various levels of critical thinking within the paper. Adequacy of critical thinking was

assessed for each opportunity within the paper. Integration of course content with students' experience, when appropriate, and evidence of critical thinking were considered the primary objectives for facilitating learning of both psychological concepts and critical thinking skills. Writing skills, i.e. style of composition, grammar, punctuation, and spelling were emphasized as important for the students' papers, but were not weighted as heavily as content particularly early in the semester. A holistic grading approach involved reading the paper and writing comments within the text, then summarizing comments at the end. Point ratios were recorded as the final grade for the paper and were added to points achieved on the in-class examination.

To assess students' perceptions of the value of the critical thinking activities, they were surveyed at the end of the semester. In a sample of 45 students, 15.2% strongly agreed that they were intellectually stimulated by the writing activities, 60.8% agreed, 17.3% were uncertain, 3 students disagreed or strongly disagreed. When asked if they thought they developed their critical thinking abilities, 15.5% strongly agreed, 57.7% agreed, 26.6% were uncertain, and none of the students disagreed or strongly disagreed.

Discussion

This instructional approach to Introductory Psychology required extra effort for the students and the professor, but was considered essential for improving the quality of students' educational experience (Allen, 1984; Nodine, 1990; McGovern and Hogshead, 1990). Reading sophisticated, well-organized papers to the class was

particularly successful as an instructional and motivational technique. Students' perceptions of the writing assignments was enhanced by making evaluation a part of their test grades, thus students' tendency to avoid and dislike these assignments was reduced. In an atmosphere in which students occasionally suffer from lack of intrinsic motivation for intellectual pursuits, the motivation of these students was enhanced by the stimulating critical thinking exercises.

Directions for continuation of this project lie in the areas of refining assessment and providing more instructional feedback to students. More specific grading criteria are necessary to ensure validity and reliability of evaluation techniques. The design of standard feedback sheets to be used during grading would reduce time spent in writing comments on papers and provide students with individual suggestions about their weaknesses and strengths.

Most students benefited by exposure to critical thinking and writing skills in addition to content knowledge of Psychology. In the best of all scenarios, psychological research findings, carefully presented by instructors and carefully studied by students, may become outmoded in less than a decade. Moreover, our environment of accelerating social and technological change demands that psychology educators rethink their course content and embed critical thinking and writing skills into that content. Possession of these skills benefits students in their chosen professions, whether in psychology or some other field, after factual information is forgotten.

References

Allen, G. J. (1984). Using a personalized system of instruction to improve the writing skills of undergraduates. Teaching of Psychology, 11, 95-98.

Blevins-Knabe, B. (1987). Writing to learn while learning to write. Teaching of Psychology, 14, 239-241.

Boice, R. (1982). Teaching of writing in psychology: A review of sources. Teaching of Psychology, 9, 143-147.

Boice, R. (1990). Faculty resistance to writing intensive courses. Teaching of Psychology, 17, 13-17.

Calhoun, L. G., & Selby, J. W. (1979). Writing in psychology: A separate course? Teaching of Psychology, 6, 232.

Costin, F. (1982). Some thoughts on general education and the teaching of undergraduate psychology. Teaching of Psychology, 9, 26-28.

Glaser, E. M. (1985). Critical thinking: Education for responsible citizenship in a democracy. National Forum, 65, 24-27.

Knoblauch, C. H., & Brannon, L. (1983). Writing as learning through the curriculum. College English, 45, 465-474.

McGovern, T. V., & Hogshead, D. L. (1990). Learning about writing, thinking about teaching. Teaching of Psychology, 17, 5-10.

Meyers, C. (1986). Teaching Students to Think Critically. San Francisco: Jossey-Bass Publishers.

Olson, C. B. (1984, November). Fostering critical thinking through writing. Educational Leadership, pp. 28-39.

Snodgrass, S. E., (1985). Writing as a tool for teaching social psychology. Teaching of Psychology, 12, 91-94.

Spiegel, T. A., Cameron, S. M., Evans, R., & Nodine, B. F. (1980). Integrating writing into the teaching of psychology: An alternative to Calhoun and Selby. Teaching of Psychology, 7, 242-243.

Willis, A. S., Shelton, F., & McDowell, D. (1991, November). Critical thinking: Designing and assessing writing assignments. Paper presented at the meeting of the South Carolina Higher Education Assessment Network, Myrtle Beach, SC.

Zechmeister, E. B., & Johnson, J. E. (1992). Critical thinking: A functional approach. Pacific Grove, CA: Brooks/Cole.

Appendix

Writing Assignments

PSYCHOLOGY 101 Activity and Paper Topic for Cycle 1: RESEARCH METHODS
DR. WILLIS

As we discussed the experimental method in class, you learned about the importance of analyzing behavior and the environment by reducing them to specific components or variables. For your first paper you will be thinking and writing about the following abstract (summary) of an experiment designed to study differences between individuals in the way they react to stress in their environment. You may use your class notes, text, and your own ability to think critically (no teamwork or outside help).

Point value

3 1. Begin your paper by defining experiment, independent variable and dependent variable.

6 2. Identify the independent variables (4) and the dependent variables (2) of this experiment.

4 3. Break down the independent variables into their levels that provide a means for experimental comparisons.

2 4. Design an expansion of this study. In other words, add other variables that would reveal more information.

2 5. Imagine that you are a psychologist. Why would you be interested in conducting this experiment?

3 6. Predict the results of this experiment. What do you think the experimenter will find out?

Individual differences in preference for information about an upcoming stressful event were studied. In order to cope with a stressful event, some people called Monitors prefer to have detailed information about the event; others called Blunters prefer very little information. Ninety-six subjects were identified as Monitors and Blunters. Later, they were given either brief or detailed information about a difficult anagram task. The experimenter measured subjective arousal using an anxiety questionnaire, and measured physiological arousal by taking heart rate. These measurements were taken at three phases: 1) before the information was given, 2) after the information was given, and 3) after they completed the anagram task. In order to make the anagram task more stressful, half the subjects listened to loud noise through headphones during the task; the other half did not listen to noise.

PSYCHOLOGY 101 Paper Topic for CYCLE 2: BIOLOGICAL BASES
DR. WILLIS

For Cycle 2, the textbook contains chapters describing the fields of biological bases of behavior, sensation, and perception. Chapter 2 - Biological Bases of Behavior - is required reading. We will discuss in detail neural transmission and the structure and function of the nervous system. This paper topic allows an opportunity to critically think about related areas - Sensation and Perception.

Some people believe in ESP (extrasensory perception), while other people doubt the existence of ESP. What do you think?

In answering this question, consider the following points, and address these issues/questions in your paper:

a. What evidence (e.g. facts and/or experiences) has led you to your position of believing or disbelieving?

b. Given the human sensory system, how is ESP possible or not possible?

c1. If you believe in ESP, differentiate between the sensory processes and the perceptual processes of an ESP experience.

or

c2. If you do not believe in ESP, what kinds of sensory and perceptual events would lead you to change your mind and start believing in ESP?

PSYCHOLOGY 101 Activity and Paper Topic for CYCLE 3: SLEEP
DR. WILLIS

"Why does the eye see a thing more clearly in dreams than in the imagination when awake?"

Leonardo da Vinci (1452-1519)

Many people say they dream only rarely. But as you will learn during the Sleep cycle of Psychology 101, all people go through several dreaming episodes each night. If they awaken in the middle of one such episode they generally report a dream.

The activity for this cycle requires that you perform a task as soon as you wake up in the morning: write down any dream you can recall which occurred during the previous night. Also make note of mornings on which you do not remember any dreams.

Keep some paper next to your bed and record your dreams before you get up. Failure to remember dreams is more pronounced after you arise and begin the daily rituals of readying yourself for the day. In your dream journal, describe the content of your dream, and continue to do so for one week. You will have a chance to discuss the journal contents if you wish.

PAPER TOPIC

If you would like to turn in a paper for Cycle 3, you will base it on information in your dream journal. Answer the following questions in your paper which is due before the next test.

1. Describe the content of some dreams over the 7-day period.

2. What proportion of dreams are related to current personal issues? What proportion seem totally unrelated to your personal experience?

3. Did these dreams deal with personal matters directly, or in some symbolic fashion?

4. Reflect upon your dreams and give me your opinion about the relevance of da Vinci's quote. In other words, did you gain any insights into your daily "waking" experiences by recording and thinking about your dreams?

5. If you were consistently unable to remember dreams, design a strategy for awakening during a dream.

Author Note

Early strategies for creating and implementing experiential exercises and writing assignments were made in collaboration with Evan Zucker while team-teaching Introduction to Psychology at Loyola University of New Orleans.